

COMMUNICATION TOWERS AND MIGRATING BIRDS:

Guidelines for Minimizing Bird Mortality at Communication Towers

Prepared by

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Background: The Northeast Working Group of Partners in Flight, a collection of bird conservationists from state and federal agencies and from private conservation organizations, seeks to improve awareness and encourage implementation of simple conservation measures designed to minimize avian mortality at communications facilities across the region. The following guidelines are a summary of a more detailed set of federal guidelines also designed to reduce frequency of birds striking communication towers. We recommend that the guidelines presented below be considered by agency personnel when conducting environmental permit reviews and by municipal officials attempting to balance the need for wireless communication and impacts to the local environment.

Statement of Problem:

- ❖ Millions of songbirds migrate between the northern and southern hemispheres each spring and fall.
- ❖ These birds migrate in broad fronts (i.e., successive waves at the regional scale) not specifically along corridors. However, ridgelines, and waterbodies are important in funneling birds across certain landforms.
- ❖ Most songbirds migrate at night, typically embarking just after dusk and flying a few hundred miles or so before landing again within an hour or so of midnight. They generally feed and rest until the next evening, though short morning “corrections” are not uncommon.
- ❖ Spring migration occurs largely between late April and early June. In fall, however, it stretches from late July through November.
- ❖ Birds navigate largely by orientation of the stars, although many details of migration remain unknown.
- ❖ When birds encounter lighted structures, like tall buildings and communication towers, their nocturnal “navigation system” can become disoriented. This can result in collision with the structure itself or its guy wires.
- ❖ Mortality may be low at individual sites, but can reach catastrophic proportions under certain environmental conditions coupled with some tower designs and the numbers of towers now in place or under construction. Specifically, on foggy nights during migration the effective area lit by a beacon atop a communications tower, for example, is far greater than on clear nights. This results from the reflections of light

by water particles in the atmosphere. When birds encounter this “halo” of light, many will not leave its area of influence, continually encircling the tower and often fatally striking the structure.

Assumptions:

- ❖ Few empirical studies have focused on causes of bird mortality at communication facilities. In 2000, the U. S. Fish & Wildlife Service had a literature review prepared on this topic. That review is available on the World Wide Web at <http://migratorybirds.fws.gov/issues/towers/review.pdf>. The following guidelines draw from these and represent a common sense approach to minimizing bird mortality given our current limited state of knowledge.
- ❖ Some municipalities in the northeastern United States (e.g., Town of Caroline, Tompkins County, New York) have developed ordinances to guide communication tower development. These have addressed potential negative environmental and aesthetic issues as well as benefits to safety, security, and commerce.

Guidelines:

- ❖ Keep towers under 200 ft whenever possible.
 - This should not require lighting, which is one of the key ingredients for causing bird mortality.
 - Any project proposed at just over 200 ft should be strongly urged to lower maximum height to 199 ft or less.
 - This will result in more towers in some locations, but is an acceptable trade off if towers are not lighted.
- ❖ Lighting considerations:
 - If lights are needed (e.g., structure must be greater than 200' for technical reasons, proximity to an airport, etc.), white strobes with the maximum permissible “off” interval (i.e., time between flashes) appear preferable to pulsating red beacons.
 - Lights at the base of towers (e.g., for security or service purposes) should be pointed downward or down-shielded to minimize upward illumination.
- ❖ Monopole designs are preferred over lattice-type towers.
 - Avoidance of guy wires is preferable, even if it requires a slightly larger footprint for the tower.
- ❖ Siting and design of towers:
 - Always consider co-locating on existing structures (e.g., water towers, power lines or other telecommunication structures) whenever technologically feasible.
 - New towers should be equipped to handle the maximum number of users on the same structure (provided this can be done below 200') which will avoid construction of multiple, single user towers in close proximity.
 - Keep towers off ridgelines to further reduce fatal encounters by migrating birds. This too could result in more towers in some locations, but is an acceptable trade off if towers are not lighted.